S-TIM25

Code(d) **673321**
Code(e) **678318**

Refractive Index n_d	**1.672 70** 1.672 700	Abbe Number ν_d	**32.10**	Dispersion $n_F - n_C$	**0.020 957**
Refractive Index n_e	1.677 651	Abbe Number ν_e	31.84	Dispersion $n_{F'} - n_{C'}$	0.021 280

Refractive Indices		
λ (μm)		
n_{2325}	2.325 42	1.629 88
n_{1970}	1.970 09	1.635 83
n_{1530}	1.529 58	1.642 58
n_{1129}	1.128 64	1.649 33
n_t	1.013 98	1.651 84
n_s	0.852 11	1.656 56
$n_{A'}$	0.768 19	1.660 00
n_r	0.706 52	1.663 26
n_C	0.656 27	1.666 61
$n_{C'}$	0.643 85	1.667 56
$n_{He\text{-}Ne}$	0.632 8	1.668 46
n_D	0.589 29	1.672 52
n_d	0.587 56	1.672 70
n_e	0.546 07	1.677 65
n_F	0.486 13	1.687 56
$n_{F'}$	0.479 99	1.688 84
$n_{He\text{-}Cd}$	0.441 57	1.698 40
n_g	0.435 835	1.700 11
n_h	0.404 656	1.711 26
n_i	0.365 015	

Constants of Dispersion Formula	
A_1	1.506 592 33E+00
A_2	2.047 861 35E-01
A_3	1.920 366 68E+00
B_1	1.095 015 62E-02
B_2	5.749 802 85E-02
B_3	1.781 285 35E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	2
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.2

Mechanical Properties		
Young's Modulus E (GPa)	84.1	
Rigidity Modulus G (GPa)	34.0	
Poisson's Ratio σ	0.236	
Knoop Hardness Hk[Class]	570	6
Abrasion Aa	146	

Partial Dispersions	
$n_C - n_t$	0.014 766
$n_C - n_{A'}$	0.006 611
$n_d - n_C$	0.006 093
$n_e - n_C$	0.011 044
$n_g - n_d$	0.027 414
$n_g - n_F$	0.012 550
$n_h - n_g$	0.011 144
$n_i - n_g$	
$n_{C'} - n_t$	0.015 718
$n_e - n_{C'}$	0.010 092
$n_{F'} - n_e$	0.011 188
$n_i - n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.704 6
$\theta_{C,A'}$	0.315 5
$\theta_{d,C}$	0.290 7
$\theta_{e,C}$	0.527 0
$\theta_{g,d}$	1.308 1
$\theta_{g,F}$	0.598 8
$\theta_{h,g}$	0.531 8
$\theta_{i,g}$	
$\theta'_{C,t}$	0.738 6
$\theta'_{e,C'}$	0.474 2
$\theta'_{F',e}$	0.525 8
$\theta'_{i,F'}$	

Anomalous dispersion	
$\Delta\theta_{C,t}$	0.007 3
$\Delta\theta_{C,A'}$	0.000 7
$\Delta\theta_{g,d}$	0.010 1
$\Delta\theta_{g,F}$	0.009 3
$\Delta\theta_{i,g}$	

Coloring			
λ_{80}	400	λ_5	360
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	390	$\lambda_{0.05}$	362

CCI		
B	G	R
0.00	2.11	2.17

Internal Transmittance	
λ (nm)	τ_i (10 mm)
280	
290	
300	
310	
320	
330	
340	
350	
360	0.01
370	0.24
380	0.60
390	0.80
400	0.89
420	0.957
440	0.974
460	0.981
480	0.986
500	0.989
550	0.995
600	0.996
650	0.995
700	0.996
800	0.999
900	0.998
1 000	0.998
1 200	0.998
1 400	0.995
1 600	0.995
1 800	0.987
2 000	0.977
2 200	0.944
2 400	0.930

Thermal Properties		
Strain Point StP (℃)		556
Annealing Point AP (℃)		585
Transformation Temperature Tg (℃)		613
Yield Point At (℃)		649
Softening Point SP (℃)		700
Expansion Coefficients	(-30 ℃ ~ 70 ℃)	82
α_l (10^{-7} K^{-1})	(100 ℃ ~ 300 ℃)	98
Thermal Conductivity λ (W/(m·K))		1.05

Linear coefficient of thermal expansion	
Temperature range (℃)	α_l (10^{-7} K^{-1})
-100 ~ -90	69
-90 ~ -80	70
-80 ~ -70	71
-70 ~ -60	72
-60 ~ -50	73
-50 ~ -40	75
-40 ~ -30	76
-30 ~ -20	77
-20 ~ -10	78
-10 ~ 0	79
0 ~ 10	80
10 ~ 20	81
20 ~ 30	82
30 ~ 40	83
40 ~ 50	84
50 ~ 60	85
60 ~ 70	86
70 ~ 80	87
80 ~ 90	88
90 ~ 100	89
100 ~ 110	90
110 ~ 120	91
120 ~ 130	92
130 ~ 140	93
140 ~ 150	94
150 ~ 160	94
160 ~ 170	95
170 ~ 180	96
180 ~ 190	97
190 ~ 200	98
200 ~ 210	99
210 ~ 220	99
220 ~ 230	100
230 ~ 240	101
240 ~ 250	102
250 ~ 260	102
260 ~ 270	103
270 ~ 280	104
280 ~ 290	104
290 ~ 300	105

Other Properties	
Photoelastic Constant β nm/(cm·105Pa)	2.81
Specific Gravity *d*	2.91
Remarks	

Temperature Coefficients of Refractive Index												
Range of Temperature (℃)	$\Delta n_{rel}/\Delta T$ (10^{-6} K^{-1})											
	1550	t	r	C	C'	d	e	F	F'	g	h	i
-80 ~ -60	0.6	0.8	1.3	1.4	1.5	1.8	2.1	2.8	2.9	3.8	4.9	-
-60 ~ -40	0.5	0.7	1.3	1.5	1.5	1.8	2.1	2.8	2.9	3.9	5.0	-
-40 ~ -20	0.6	0.8	1.3	1.6	1.6	1.9	2.3	3.0	3.1	4.1	5.3	-
-20 ~ 0	0.7	0.9	1.5	1.6	1.7	2.0	2.4	3.2	3.3	4.3	5.5	-
0 ~ 20	0.8	1.0	1.7	1.9	1.9	2.3	2.6	3.4	3.5	4.5	5.8	-
20 ~ 40	0.9	1.2	1.7	2.0	2.1	2.5	2.8	3.6	3.7	4.8	6.1	-
40 ~ 60	1.0	1.4	2.0	2.2	2.3	2.6	3.0	3.8	3.9	5.1	6.4	-
60 ~ 80	1.2	1.5	2.1	2.3	2.4	2.7	3.2	4.1	4.2	5.4	6.8	-
80 ~ 100	1.3	1.6	2.2	2.5	2.5	2.9	3.3	4.2	4.3	5.6	7.1	-
100 ~ 120	1.4	1.7	2.3	2.6	2.6	3.0	3.4	4.4	4.5	5.8	7.2	-
120 ~ 140	1.4	1.7	2.4	2.7	2.7	3.1	3.6	4.5	4.6	6.0	7.6	-
140 ~ 160	1.4	1.7	2.4	2.7	2.8	3.2	3.7	4.7	4.8	6.2	7.7	-
160 ~ 180	1.5	1.8	2.5	2.8	2.9	3.3	3.7	4.7	4.9	6.3	7.9	-

OHARA Copyright© OHARA INC. All Rights Reserved.

※The name of the glass type is the model number assigned based on the main components of the composition: large, medium, small refractive index and serial number.